ELK MOUNTAIN FARMS - TAVERN FARM (PWS# 1110041)
SOURCE WATER ASSESSMENT REPORT

October 22, 2002

State of Idaho
Department of Environmental Quality

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality (DEQ) is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000 foot radius of your drinking water source, sensitivity factors associated with the source, and characteristics associated with either your aquifer or watershed in which you live.

This report, *Source Water Assessment for Elk Mountain Farms- Tavern Farm (PWS# 1110041)* located along the Canadian border in Boundary County, Idaho, describes the public drinking water system, the associated potential contaminant sources located within a 1,000 foot boundary around the drinking water source, and the susceptibility (risk) that may be associated with any potential contaminants. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this system. **The results should <u>not</u> be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

The Elk Mountain Farms- Tavern Farm drinking water system consists of one well, designated Well #1. Drilling of the well was completed in approximately 1990. The well is 300'deep and uses an eight-inch casing. The casing extends 32" above ground. The Idaho Department of Water Resources (IDWR) *Well Construction Standards Rules (1993)* require all public water systems (PWSs) to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works (1997)* during construction. Various aspects of the standards can be assessed from well logs. Table 1 of the *Recommended Standards for Water Works (1997)* states that 8-inch steel casing requires a thickness of 0.322 inches. The thickness of the Tavern Farm well's casing and other construction characteristics cannot be determined because a well driller's log was not available at the time of this assessment. At the time of the well's 1997 sanitary survey, the wellhead and surface seal had been maintained appropriately. The wellhead is located near the Kootenai River and is within the boundaries of the river's 100-year floodplain. The well was assigned a high system construction score.

The well received a moderate hydrologic sensitivity score. It is located in an area of poorly drained soils that will provide some protection against contaminants moving underground. However, additional favorable geologic conditions could not be confirmed without a well driller's log. The well is artesian during the spring runoff period.

There are four known potential contaminant sites located within the well's source water assessment area. The sites consist of a railroad, a highway, a landing strip and a drainage ditch. The transportation-related sites may be a source of contaminants associated with fuel and chemical spills, while the drainage ditch may be a source of microbial contaminants. The drainage ditch is located only 17' from the wellhead, which encroaches on the well's sanitary setback distance of 50'. Due to this the well was assigned a high susceptibility score in the microbial category. The water system must apply for a waiver of the setback distance, isolate the surface water within a culvert, or relocate the well at least 50' from surface water. Additionally, the water system must

complete ground water under the direct influence of surface water (GWUDI) monitoring to determine if the surface water affects the quality of water in the well. Information regarding this monitoring can be obtained from Mike Nelson of Panhandle Health District 1 in Sandpoint, Idaho. The well received moderate potential contaminant/land use scores in the volatile organic chemical and synthetic organic chemical categories. A low score was assigned in the inorganic chemical category. Information regarding the potential contaminants within the 1,000-foot boundary have been summarized and included in Table 1.

Table 1.

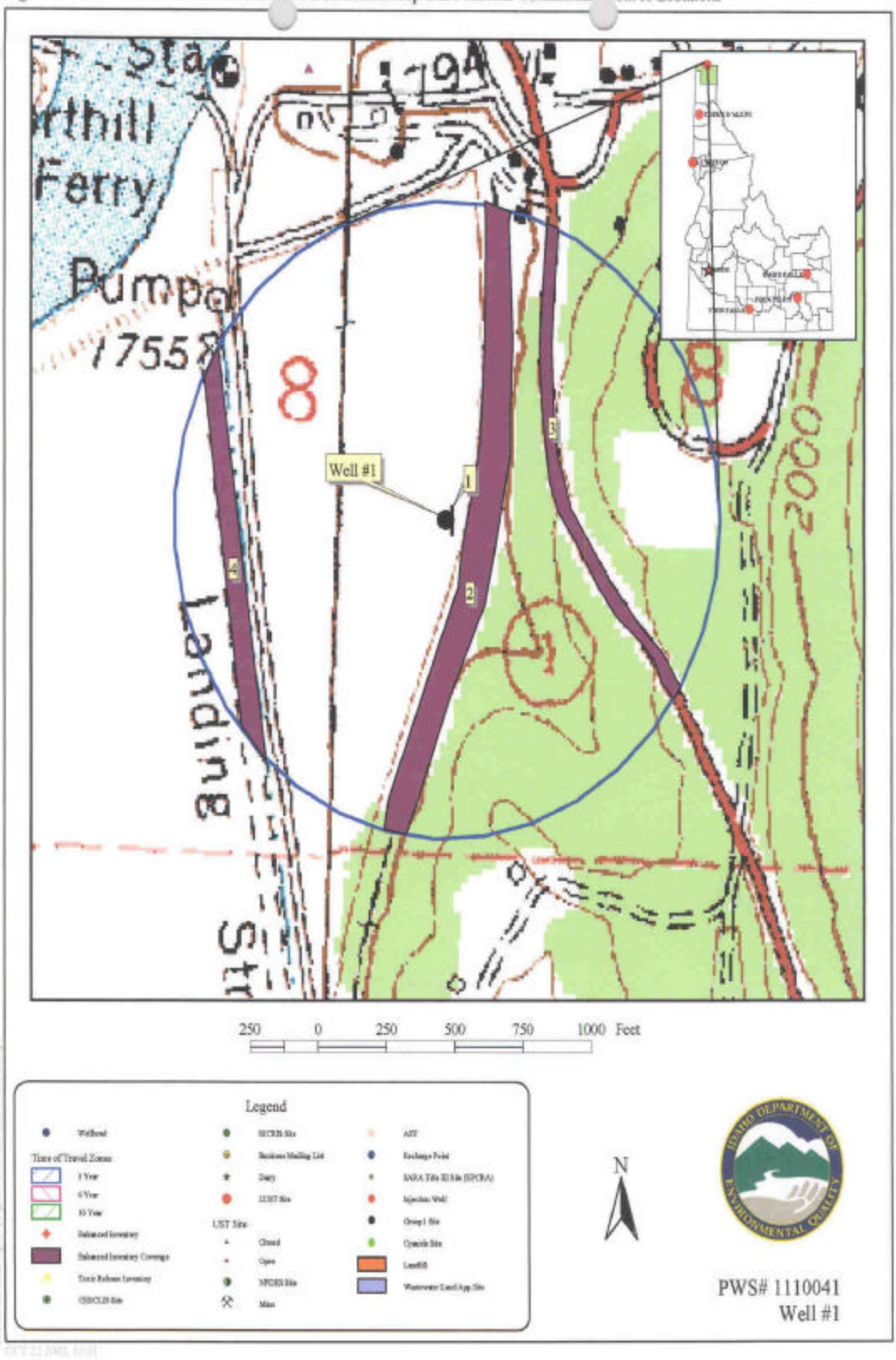
SITE #	Source Description	Source of Information	Potential Contaminants[1]
1	Drainage Ditch	Enhanced Inventory	Microbial
2	Railroad	Enhanced Inventory	IOC, VOC, SOC
3	Transportation Corridor	Enhanced Inventory	IOC, VOC, SOC
4	Landing Strip	Enhanced Inventory	VOC, SOC

[1]IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Elk Mountain Farms- Tavern Farm samples for total coliform quarterly. The drinking water appears to test positive for total coliform frequently during the winter months. The last positive sample was collected on January 22, 2002. The water system operator disinfects the system with chlorine periodically. Nitrate is monitored annually, with measurements ranging from 0- 1.25mg/L. The maximum contaminant level for nitrate is 10mg/L. The system's water is treated for hardness before entering the distribution system.

Aside from the high score in the microbial category, the well received an overall susceptibility ranking of moderate in all chemical categories. A copy of the susceptibility analysis for your system along with a map showing any potential contaminant sources is included with this summary.

Figure 1. Elk Mountain Farms- Tavern Farm Delineation Map and Potential Contaminant Source Locations



This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Elk Mountain Farms- Tavern Farm should focus drinking water protection activities on maintaining current water quality. This can best be achieved by continuing to operate the water system in compliance with the *Idaho Rules for Public Drinking Water Systems.* The system's first step should be to address the proximity of the drainage ditch to the wellhead and complete GWUDI monitoring. The water system should then consider developing a drinking water protection plan that addresses public education, management of potential contaminant sites and contingency planning. Local residents and employees should be made aware of the location of the well and the location of the well's source water assessment areas. They should be advised of methods for the proper disposal of household hazardous wastes in these areas and of septic system maintenance procedures. The well's source water assessment area should be considered when siting new waste disposal systems, roads and buildings. The water system should draw up a contingency plan that outlines emergency response activities with special attention paid to spill response procedures because of the multiple transportation corridors in the well's source water assessment area. The contingency plan should also identify an alternative source of water should one become necessary. Partnerships with state and local agencies and industry groups should be established and are critical to success. Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

For assistance in developing drinking water protection (formerly wellhead protection) strategies please contact Melinda Harper, Idaho Rural Water Association, at 1-800-962-3257 or Shantel Aparicio at the Coeur d'Alene regional IDEQ office at (208) 769-1422.

Attachment A

Elk Mountain Farms - Tavern Farm
Susceptibility Analysis
Worksheet

Ground Water Susceptibility Report Public Water System Name : ELK MOUNTAIN FARMS TAVERN FARM Well# : WELL #1

Public Water System Number 1110041 10/22/2002 11:36:15 AM

1. System Construction		SCORE			
Drill Date	1/1/1990				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES	1997			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	NO	1			
Total System Construction Score		5			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A		0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	NO	NO	YES*
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	3	3	3	1
(Score = # Sources X 2) 8 Points Maximum		4	6	6	2
Sources of Class II or III leachable contaminants or	YES	2	3	3	
4 Points Maximum		2	3	3	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		6	9	9	2
Cumulative Potential Contaminant / Land Use Score		6	9	9	2
4. Final Susceptibility Source Score		11	11	11	10
5. Final Well Ranking		Moderate	Moderate	Moderate	High

*Source automatically ranked highly susceptible in this category due to the presence of this contaminant within the well's sanitary setback distance of 50'

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.375)

Ground Water Final Susceptibility Scoring

0-5 = Low Susceptibility

6-12 = Moderate Susceptibility

> 13 = High Susceptibility

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (IDEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by IDEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.